

## REMARKS

Claims 1-3 and 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over United States Patent No. 6,380,995 to Kim. Claims 4 and 7-9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim in view of United States Patent No. 6,327,009 to Ichimura. Claims 5-9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim et al. in view of United States Patent No. 6,339,291 to Codama. Applicants respectfully traverse these rejections.

Applicants respectfully submit that the cited references, alone or in combination, fail to disclose or suggest all of the features of the present invention. More specifically, the Kim. reference, either alone or in combination with any of the other cited references, does not disclose or suggest a method of manufacturing a substrate for a liquid crystal display device that includes, *inter alia*, a step of “performing a heat treatment to said resin layer to form random undulations in said surface portion” (emphasis added), as now defined in amended independent Claim 1.

In each of the §103 rejections, the Examiner relied upon the Kim reference as the base reference. However, the Kim reference does not include a step of performing a heat treatment to form random undulations in the surface portion of the resin layer, as now defined in amended independent Claim 1. Instead of such random undulations, the Kim reference describes an insulating layer with a plurality of concave and convex portions that appear to be located in a pre-selected pattern, such as the convex portions represented by the circles of Figure 3 of the Kim reference. In the Kim reference, it appears as though a mask is

used to create a pre-determined pattern of concave and convex portions, and then transparent portions 33 are formed on the convex portions, as shown in Figure 3. In contrast, in the present invention, the undulations on the resin layer (such as resin layer 20 of Applicants' Figure 3) are random, and are formed by the combination of the step of "selectively reforming the surface portion of said resin layer by applying energy . . . to said resin layer to generate a difference in a rate of thermal shrinkage between said surface portion and the layer portion other than the surface portion" and the step of "performing a heat treatment to said resin layer," as defined in independent Claim 1.

Additionally, Applicants respectfully submit that one of ordinary skill in the art would not have modified the manufacturing method of the device of the Kim reference so that the convex and concave portions are random because to do so would make it difficult, if not impossible, to create the transparent portions 33 (of Figure 3 of Kim) in the appropriate locations with respect to the convex portions.

Further, the other cited references also fail to remedy the deficiency noted above with regard to the Kim reference, nor were they relied upon for this missing feature. Accordingly, as all of the features of independent Claim 1 are not disclosed or suggested in the Kim reference, either alone or in combination with the cited references, Applicants respectfully request the withdrawal of these §103 rejections of independent Claim 1 and associated dependent Claims 2-9.

Applicants have also added new Claims 14-18 and respectfully submit that new Claims 14-18 are allowable for at least the reasons discussed above and also because the

cited references fail to disclose or suggest a method of manufacturing a substrate that includes, *inter alia*, a step of selectively reforming the surface position of a resin layer by applying energy with an energy density per unit time of a prescribed value or more to the resin layer “without using a mask” to generate a difference in a rate of thermal shrinkage between the surface portion and the layer portion other than the surface portion of the resin layer, as deferred in new Claim 14.

According to the present invention of new Claim 14, an energy with an energy density per unit time of a prescribed value or more is applied to the whole surface of the resin layer without using a mask, so that a difference in a rate of thermal shrinkage between the surface portion and the layer portion other than the surface portion in the resin layer is generated. By performing heat treatment to the resin layer, the random undulations in the surface portion are formed.

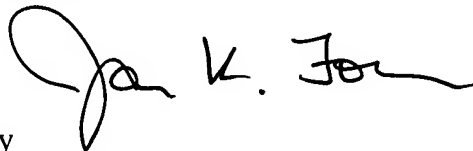
On the other hand, in the Kim reference, the optically sensitive resin layer is exposed through a mask and is developed so that concavities and convexities are formed at the surface of the resin layer. According to this technology, the concavities and convexities formed at the surface of the resin layer are based on the mask pattern, and as long as the mask is employed, the final shape of the resin surface is not random undulation.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. Should the Examiner be of the opinion that a telephone

conference would aid in the prosecution of the application, or that outstanding issues exist,  
the Examiner is invited to contact the undersigned.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

A handwritten signature in black ink, appearing to read "James K. Folker". The signature is fluid and cursive, with the first name "James" being the most prominent part.

By

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